

SPECIFICATIONS

The PoE Extenders shall deliver 10/100Mbps full duplex data at lengths up to 2000 ft. (610m) over standard 2- or 4-pair twisted-pair cable. They shall be capable of providing up to 25.5W PoE power per 802.3af and 802.3at specification at receiver output ports. The PoEXRX1 receiver shall be capable, when connected to ethernet switches and powered devices that support Cisco UPOE, of increasing power available to the powered device to more than 25.5W, and up to 50W. PoE power delivery capabilities shall be subject to wire gauge, wire construction, wire length, ambient temperature, power source ratings, and network topology. The PoE Extenders shall reduce the additional costs and disruptions associated with other products or solutions.



TECHNICAL INFORMATION

| Attributes: | Part Number | Model Type | Dimensions LXWXH, in. (cm) | Weight oz. (g) | Interface on both sides |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------------------------|-------------------|-------------------------------|
| | POEXTX1 | Transmitter | 3.51 x 1.98 x 1.01 (8.91 x 5.03 x 2.57) | 4.0 (114) | 1 RJ45 port to 1 RJ45 port |
| | POEXRX1 | Receiver | | | |
| | POEXTX1 | Transmitter | | | |
| Power consumption, Watts: | 1.5 | | | | |
| RoHS compliance: | Compliant | | | | |
| UL rating: | UL 60950-1 | | | | |
| Data support capability: | Switch and End IP Device must both be capable of transmitting at the same data rate of either 10BASE-T (for 10Mbps) or 100BASE-TX (for 100Mbps) | | | | |
| PoE support capability: | End IP device must be IEEE 802.3af/at compliant | | | | |
| Operating temperature: | -40°F to 158°F (-40°C to 70°C) | | | | |
| Mean time before failure (MTBF): | 20+ years | | | | |
| Humidity: | 10% to 95% (non-condensing) at 35°C | | | | |
| Cable requirements: | Required: 24 AWG 2-pair Category 5e Recommended: 23 AWG 4-pair Category 6 | | | | |
| Supported data rate: | 10/100Mbps full duplex | | | | |
| Optional Power Supply: | The PoE Extenders will accept an optional power supply with an output of 55 VDC, 2 amperes (37 to 56 VDC required, 48 to 55 VDC recommended) | | | | |
| EMC: | Emission (Class B for POEXRX1 and POEXTX1) EN 55032:2012, FCC Part 15, EN 5021-4:2015 (POEXRX1, and POEXTX1) Immunity: EN 55024:2010, EN 50121-4:2015 (POEXRX1, and POEXTX1) | | | | |
| Safety: | CSA C22.2 No. 60950-1-07 2nd Ed 2014-10 IEC 60950-1:2005 + A1 + A2, EN 60950-1:2006 + A11 + A12 + A1 + A2 | | | | |

PoE Extender Kits

POEXKIT1: 1-port Extender Kit includes:

| | |
|-------------------------------------------------------------------------------------|----------------|
| 1-port transmitter box: | 1 x POEXTX1 |
| 1-port receiver box: | 1 x POEXRX1 |
| Power supply: | 1 x 60 W, 55 V |
| PoE Extenders Kit, includes 1-port transmitter and receiver box, 60 W power: | POEXKIT1-NP |

PoE Patch Panel

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|--------------------------------------|--------------|
| Long reach PoE extender rack: | POEXPANEL-BL |
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PoE Extender Transmitters

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| 1-port transmitter box: | POEXTX1 |
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PoE Extender Receivers

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|-----------------------------|---------|
| 1-port receiver box: | POEXRX1 |
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Field-term Plugs

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| Field-term Plug: | FP6X88MTG |
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UTP Copper Cable

| | |
|------------------------------------------------|---------------|
| Cat6 outside plant, 1,000 ft. reel: | PUO6C04BL-CEG |
| Cat6 plenum, 1,000 ft. reel: | PUP6004BUWLP |
| Cat6 riser, 1,000 ft. reel: | PUR6004BU-W |
| Cat6, UTP w/ TX6™ Modular Plugs: | UTPSP*Y |
| Cat6, 23 AWG Enhanced 1,000 ft. carton: | PUP6004BUWLPZ |
| Cat6, 23 AWG 1,000 ft., carton: | PUP6C04BU-WZ |
| 1,000 ft., carton: | |

| | |
|----------------------------------------|--------|
| Termination Tool for FP6X88MTG: | EGJT-1 |
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|----------------------------------------------------------------|-----------|
| Power Cord, 3-pin, 10A, 2m, IEC320-C13 to CEE 7/7 (EU): | C13CORD-F |
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| Power Cord, 3-pin, 10A, 2m, IEC320-C13 to BS1363A (UK): | C13CORD-G |
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| Power Cord, 3-pin, 10A, 2m, IEC320-C13 to GB2099 (China): | C13CORD-I |
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| Power Cord, 3-pin, 10A, 2m, IEC320-C13 to GB2099 (Americas): | C13CORD-B |
|---------------------------------------------------------------------|-----------|

| | |
|---------------------------------------------------------|-----------|
| Power Supply 60 W C14M AC-55VDC 1.1A P2.1X5.5MM: | POWER-60W |
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|----------------------------------------------------------|------------|
| Power Supply 110 W C14M AC-55VDC 2.0A P2.1X5.5MM: | POWER-110W |
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| | |
|----------------------------------------------------------|------------|
| Power Supply 190 W C14M AC-55VDC 3.5A P2.1X5.5MM: | POWER-190W |
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PoE Extenders

KEY FEATURES AND BENEFITS

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|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Low cost of installation: | Significant cost savings compared to fiber cable and media convertors option or other options in the market |
| Compatibility with existing PoE or non-PoE switches: | These extenders fit very easily into an existing infrastructure and help extend PoE over the standard 100 meters range |
| Uses standard twisted 4-pair cable: | Does not require the usage of specialized cables such as hybrid copper/fiber cables |
| RJ45 interface: | Utilizes standard RJ45 interfaces which makes it easy for field terminations of copper cable being used to transmit PoE |
| Individually serialized: | Marked with quality control number for future traceability |
| Doubles as PoE injectors: | Optional external power supply option helps to inject power into the channel when non-PoE switch is being used |
| Small profile: | Small size makes it fit into smaller spaces like a base of a light pole |

APPLICATIONS

PoE extenders are best suited for providing power and 100Mbps data to IEEE 802.3af/at compliant devices such as cameras, VoIP phones, access card readers, PoE lights and others, at a distance beyond the standard 100m channel.



TERMS USED

| | |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2-pair: | In a PoE system, power is provided on only 2 of the Ethernet pairs of wires. Standards based systems use Mode A or Mode B, but not both. |
| 4-pair: | In a PoE system, power is provided on all 4 of the Ethernet pairs of wires. Standards based systems will provide both Mode A and Mode B power delivery. Power loss in a 4-pair PoE system is usually half that in a 2-pair PoE system. |
| Class: | In a PoE system, powered devices (PDs) are specified by class, based on the power they consume, their under-voltage lockout (UVLO) and whether they are 2-pair or 4-pair devices. |
| Mode A: | In a PoE 2-pair system, power is supplied on Ethernet connector pins 12 and 36. |
| Mode B: | In a PoE 2-pair system, power is supplied on Ethernet connector pins 45 and 78. |
| Powered Device (PD): | In a PoE system, these devices draw power from the source, or PSE. Currently, there are up to eight "classes" of powered devices enumerated in the PoE standards. |
| Power Sourcing Equipment (PSE): | In a PoE system, this device transmits power to the system. Currently, there are four "types" of PSE enumerated in the PoE standards. |
| Under-Voltage Lockout (UVLO): | In power systems, this is the voltage threshold below which a device no longer operates. Most PoE systems have UVLO of about 30 volts. If the PoE voltage drops below 30V, the power devices (PDs) may stop operating. |

PoE Extenders

POWER SUPPLY OPTIONS

Power supply options show the power available at the Powered Device (PD).

Scenario 1: 1-port (POEXTX1) Transmitter Box Powered by 50 W Power Sourcing Switch (assuming 55 VDC output).

| PoE Class | Standard | Max Wattage at PD | Under Voltage Lockout at PD | PSE-TX1 - ft. | TX1 - RX1 - Cable Distance (ft.) | | RX1 - PD - ft. |
|-----------|----------|-------------------|-----------------------------|---------------|----------------------------------|----------------------|----------------|
| | | | | | 23 AWG 1.04Ω/100 ft. | 24 AWG 1.04Ω/100 ft. | |
| 1 | 802.3af | 3.84 | 37 | 50 | 2000 | 2000 | 50 |
| 2 | | 6.49 | | | | | |
| 3 | | 12.95 | | | | | |
| 4 | 802.3at | 25.50 | 42 | | 1791 | 1303 | |
| 5 | 802.3bt | - | - | | 1257 | 914 | |
| 6 | | | | | - | - | |

Scenario 2: 1-port transmitter (POEXTX1) locally powered (55Vdc output, Panduit POWER-60W). Turn off ethernet switch PoE power on extender ports.

| PoE Class | Standard | Max Wattage at PD | Under Voltage Lockout at PD | SW - TX1 - m | TX1 - RX1 - Cable Distance (ft.) | | RX1 - PD - ft. |
|-----------|----------|-------------------|-----------------------------|--------------|----------------------------------|----------------------|----------------|
| | | | | | 23 AWG 1.04Ω/100 ft. | 24 AWG 1.04Ω/100 ft. | |
| 1 | 802.3af | 3.84 | 37 | ≤ 100 | 2000 | 2000 | 50 |
| 2 | | 6.49 | | | | | |
| 3 | | 12.95 | | | | | |
| 4 | 802.3at | 25.50 | 42 | | 1791 | 1303 | |
| 5 | 802.3bt | - | - | | 1257 | 914 | |
| 6 | | | | | - | - | |

Scenario 3: 1-port transmitter (POEXTX1) powered by 50W Power Sourcing Switch (assuming 55Vdc output) with 1-port receiver (POEXRX1) locally powered (55Vdc output, Panduit POWER-60W).

| PoE Class | Standard | Max Wattage at PD | Under Voltage Lockout at PD | PSE - TX1 - ft. | TX1 - RX1 - Cable Distance (ft.) | | RX1 - PD - m |
|-----------|----------|-------------------|-----------------------------|-----------------|----------------------------------|----------------------|--------------|
| | | | | | 23 AWG 1.04Ω/100 ft. | 24 AWG 1.04Ω/100 ft. | |
| 1 | 802.3af | 3.84 | 37 | 50 | 2000 | 2000 | ≤ 100 |
| 2 | | 6.49 | | | | | |
| 3 | | 12.95 | | | | | |
| 4 | 802.3at | 25.50 | 42 | | - | - | |
| 5 | 802.3bt | - | - | | - | - | |
| 6 | 802.3bt | - | - | | - | - | |

Scenario 4: 1-port transmitter (POEXTX1) powered by 50W Power Sourcing Switch (assuming 55Vdc output) with 1-port receiver (POEXRX1) locally powered (55Vdc output, Panduit POWER-60W).

| PoE Class (4-port) | Standard | Total Wattage Available for PD(s)* | Under Voltage Lockout at PD | PSE - TX1 - ft. | TX1 - RX4 - Cable Distance (ft.) | | RX4 - PD(s) - ft. |
|--------------------|----------|------------------------------------|-----------------------------|-----------------|----------------------------------|----------------------|-------------------|
| | | | | | 23 AWG 1.04Ω/100 ft. | 24 AWG 1.04Ω/100 ft. | |
| 1 | 802.3af | 15.36 | 37 | 50 | 2000 | 2000 | 50 |
| 2 | | 25.96 | | | | | |
| 3 | | - | - | | | | |
| 4 | 802.3bt | - | - | | - | - | |
| 5 | | | | | - | - | |
| 6 | | | | | - | - | |

Scenario 5: 1-port transmitter (POEXTX1) locally powered (55Vdc output, Panduit POWER-60W). Turn off ethernet switch PoE power on extender ports.

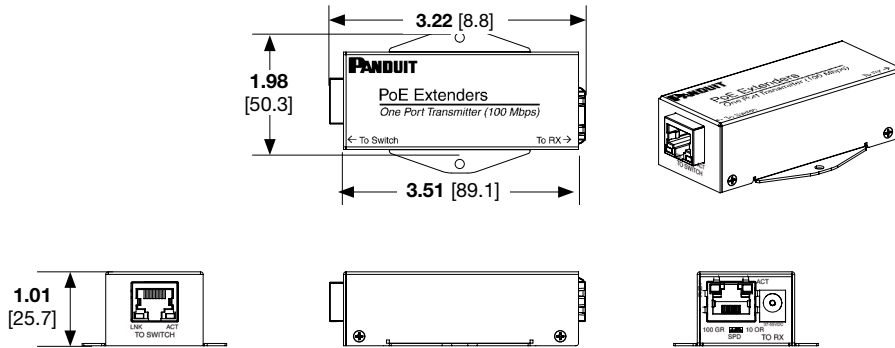
| PoE Class (4 ports) | Standard | Total Wattage Available for PD(s)* | Under Voltage Lockout at PD | SW - TX1 - m | TX1 - RX4 - Cable Distance (ft.) | | RX4 - PD(s) - ft. |
|---------------------|----------|------------------------------------|-----------------------------|--------------|----------------------------------|----------------------|-------------------|
| | | | | | 23 AWG 1.04Ω/100 ft. | 24 AWG 1.04Ω/100 ft. | |
| 1 | 802.3af | 15.36 | 37 | ≤ 100 | 2000 | 2000 | 50 |
| 2 | | 25.96 | | | | | |
| 3 | | - | - | | | | |
| 4 | 802.3bt | - | - | | - | - | |
| 5 | | | | | - | - | |
| 6 | | | | | - | - | |

* Total wattage available refers to the amount of power available to all connected PDs. 25.96W available can power four Class 1 PDs (3.84W each x 4 = 15.36W), or three Class 2 PDs (6.49W each x 3 = 19.47W) or two Class 2 PDs (12.95W each x 2 = 25.9W). Different PD classes can be mixed on the POEXRX4 if total PD power never exceeds the "Total wattage available" and no PD draws more than 25.5Watts

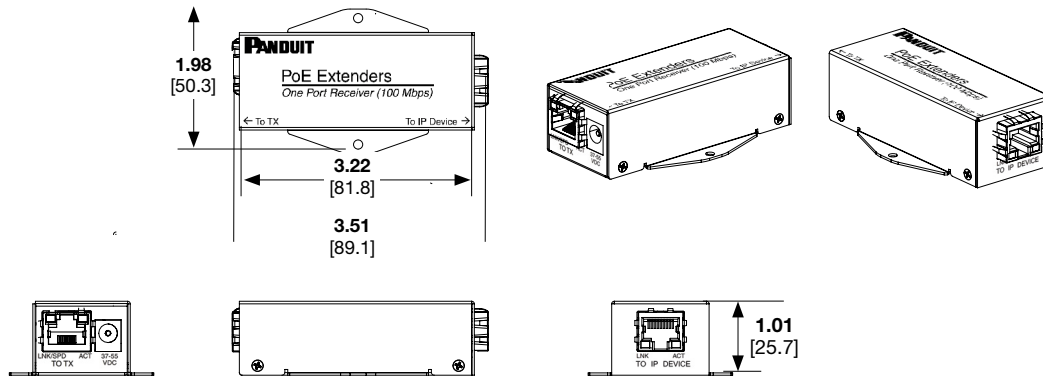
PoE Extenders

ENGINEERING DRAWINGS

1-PORT TRANSMITTER



1-PORT RECEIVER



Dimensions are in inches. [Dimensions in brackets are metric].

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